

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-12. (canceled).

13. (currently amended): An image storage and delivery method for recording and reproducing image data from a web camera via a network, the method comprising:

a first temporarily storing step of temporarily storing, by the web camera, images in a ~~first~~-memory, wherein the web camera takes the images consecutively in time-series;

a normal recording step of intermittently receiving, by a storage server, image data from the ~~first~~ memory,

wherein the storage server records the image data in a first recording channel storage-area of a disk device as first data with a first image quality along with-and time stamps;

a second temporarily storing step of temporarily storing, by the web camera, predetermined frames of the images taken by the web camera as second data with a second image quality in a ring buffer-second memory, and

a delivering step of delivering, by the storage server, image data to the client terminal in IP-packet form, wherein the client terminal requests the image data by specifying a channel and a frame number,

wherein in response to-when an alarm-occurs, the storage server performs:

a requesting step of requesting the web camera to deliver the second data representative of at least one of the images taken by the web camera before the alarm occurred, and

an alarm recording step of recording the second data from the ring buffer-second memory in a second recording channel-storage-area of the disk device with the second image quality along with and a time stamps without stopping the normal recording step, whereby the recorded second data has a higher frame rate than the first data, and a recording period of the second data and a recording period and-part of the first data overlap in an overlapping period,are representative of an image at the same time; and

wherein in response to an instruction for seamless playback, a client terminal performs a reproduction step of receiving both of the first data and the second data of the overlapping period, selecting frames, frame by frame, from the first data and the second data, and reproducing the selected frames along with the time stamps of the selected frames as a continuous video.

wherein the reproduction step repeats:

a substep of adding an elapsed time from a reproducing start time to a reproduction reference time;

a substep of updating a reproducing memory which holds a latest acquired frame and a previous acquired frame for each of the first data and the second data received from the storage server.

wherein the updating is performed when a time stamp of a latest acquired frame of either the first data or the second data indicates a time older than the reproducing reference time, by acquiring and receiving a next frame of the latest acquired frame with the older time stamp; and

a substep of comparing the time stamps of the previous acquired images of the first data and the second data to output either data as a reproducing data, having a newer time, of the first data and the second data.
during reproduction of data representative of the image at said same time, a reproduction step of preferentially receiving, by a client terminal, the recorded second data, having a higher image quality than the first data, rather than the first data, and seamlessly reproducing, by the client terminal, the first data and the second data along the time series when an instruction for seamless playback is received from a user.

14. (canceled).

15. (canceled).

16. (currently amended): The image storage and delivery method according to claim 13,

wherein the image quality indicates at least one of a frame rate, a compression factor, and a resolution, and

wherein the higher image quality indicates at least one of a higher frame rate, a lower compression factor and a higher resolution.

17. (previously presented): The image storage and delivery method according to claim 16, wherein the first data and the second data from the web camera are compressed by the web camera in an IP (Internet Protocol) packet form.

18. (previously presented): The image storage and delivery method according to claim 17, wherein the first data and the second data from the web camera include still images compressed in a JPEG (Joint Photographic Experts Group) format or a corresponding format, and the first data and the second data are recorded in a format for recording the image data intermittently.

19. (currently amended): An image storage and delivery system for recording and reproducing image data comprising:

- a web camera;
- a storage server; and
- a client terminal,

wherein the web camera comprises:

an encoder compressing and encoding images taken by the web camera at a predetermined frame rate and outputting the encoded compressed signal as image data;

a ~~first~~ memory storing a latest one frame of the outputted image data or a plurality of frames of the outputted image data which are intermittently recorded; and

a ring buffer-second memory retaining the outputted image data over a predetermined time period at an alarm recording rate,

wherein the storage server:

requests the web camera to deliver image data in the ~~first~~-memory; intermittently records the image data received from the ~~first~~ memory as first image data with a first image quality and time stamps in a first recording channel when image data is transmitted from the ~~first~~ memory based on the request for delivery of the first image data or based on a predetermined timing; and

delivers image data to the client terminal in IP-packet form, wherein the client terminal requests the image data by specifying a channel and a frame number,

wherein in response to when an alarm occurs, the storage server:

requests the web camera to deliver second image data, which is in the ring buffer-second memory and representative of at least one of the images taken before the alarm occurred, and

records the second image data received from the ring buffer-second memory with a second image quality and a time stamp in second recording channel without stopping intermittently recording the first image data when the image data is transmitted from the ring buffer-second memory based on the request for delivery of the second image data, whereby the received second image data represents images taken before the alarm occurred and quality is has a higher frame rate than the first image data, quality and a recording period of the second image data and a recording period part of the first image data are overlap in an overlapping period representative of the image at the same time, and

wherein in response to an instruction for seamless playback, a client terminal performs a reproduction step of receiving both of the first data and the second data of the overlapping period, selecting frames, frame by frame, from the first data and the second data, and reproducing the selected frames along with the time stamps of the selected frames as a continuous video,

wherein the reproduction step repeats:

a substep of adding an elapsed time from a reproducing start time to a reproduction reference time;

a substep of updating a reproducing memory which holds a latest acquired frame and a previous acquired frame for each of the first data and the second data received from the storage server,

wherein the updating is performed when a time stamp of a latest acquired frame of either the first data or the second data indicates a time older than the reproducing reference time, by acquiring and receiving a next frame of the latest acquired frame with the older time stamp; and

a substep of comparing the time stamps of the previous acquired images of the first data and the second data to output either data as a reproducing data, having a newer time, of the first data and the second data.

wherein when an instruction for seamless playback is received from a user, the client terminal preferentially receives the recorded second image data, which has a higher image quality than the first image data, rather than the first image data from the storage server, and seamlessly reproduces the first data and second data along the time series.

20. (canceled).

21. (previously presented): The image storage and delivery system according to claim 19, wherein the client terminal:

determines whether a time stamp of a second latest acquired image in a reproduced image memory for a normal channel is later than a time stamp of a second latest acquired image in a reproduced image memory for an alarm channel;

calculates a difference in time stamp between the latest acquired image and the second latest acquired image in the reproduced image memory for the alarm channel, if the time stamp of the last acquired image in the reproduced image memory for the normal channel is determined to be later;

calculates a continuation-decision value based on frame rate of the last acquired image in the reproduced image memory for the alarm channel;

compares the difference calculated with the alarm continuation-decision value calculated;

outputs the last acquired image in the reproduced image memory for an alarm channel to a monitor if the difference is equal to or less than the continuation-decision value or the time stamp of the last acquired image in the reproduced image memory for the alarm channel is determined to be later; and

if the difference is greater than the continuation-decision value, then the client terminal reads the last acquired image from the reproduced image memory for the normal channel, outputs the last acquired image to the monitor, and reproduces the image data.